PROJECT NUMBER: 8101
PROJECT TITLE: Cigarette Testing Services Division
SECTION LEADER: Joyce F. Stargardt
PERIOD COVERED: October, 1987

I. MARKET ACTIVITY

A. Objective: To monitor the introduction of new brands and brand modifications to existing brands and to report the domestic market activity on a monthly basis.

B. Results:

1. New Brands

The House of Sampoerna, an Indonesian cigarette manufacturer, is distributing three clove cigarettes in California: 234 90 mm (Box), 234 Filter Slims 100's (Box), and X-tra 90 mm (Box). The X-tra cigarettes have black cigarette paper and black tipping paper. Sweetened tipping paper is used on the 234 Filter Slims and the X-tra cigarettes. The 234 cigarettes deliver 42 mg tar and 1.9 mg nicotine; the Filter Slims deliver 32 mg tar and 1.5 mg nicotine; and the X-tra cigarettes deliver 45 mg tar and 1.6 mg nicotine.

2. Brand Modifications

R. J. Reynolds has increased the ventilation (63 to 73%) of Now 100 cigarettes resulting in lower tar (3.4 to 2.5 mg), nicotine (0.29 to 0.21 mg), and CO (4.3 to 2.4 mg) deliveries.

Lorillard has decreased the ventilation (57 to 48%) of Kent III 100 cigarettes resulting in increased tar (4.7 to 6.1 mg), nicotine (0.46 to 0.54 mg), and CO (4.9 to 7.4 mg) deliveries.

3. Unidentified 100 mm Cigarette

R. J. Reynolds is panel testing an unidentified 100 mm product with magnesium oxide paper. This product has a 10 mg tar delivery and a mechanically perforated cigarette paper. It is low in both visibility and mass burn rate. The filter contains a "red pellet" which is a co-polymer of ethylene and vinyl acetate. No flavoring or other additives were identified in this pellet.

II. ANALYTICAL METHODS DEVELOPMENT AND SUPPORT

A. Objective: To evaluate and recommend analytical methods and new technology in support of programs for R&D and Manufacturing.

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B. Results:

1. Freon®

Reynolds, American, Liggett and Lorillard continue to use Freon® expanded tobacco in their products. Freon® was not detected in the filler of Philip Morris or Brown and Williamson brands.

2. Menthyl Glucosyl Carbonate (MGC)

Menthyl Glucosyl Carbonate is a menthol release compound under evaluation for a mentholated charcoal cigarette. Menthol is released from this compound upon pyrolysis and/or hydrolysis. There are several isomers each having different menthol release efficiency. At the request of G. Yatrakis, seven solutions of MGC in ethanol were analyzed for menthol by standard gas chromatographic (packed column) procedures. The premise was that the menthol would be released in the heated injection port of the gas chromatograph, and the glass injection port liner would provide a chamber for the reaction. The solutions were analyzed on three Varian 3700 gas chromatographs (equipped with glass lined injection ports) over a five day period. The experimental results were compared to the theoretical menthol targets (50 - 200 mg menthol/mL) based on the menthol release efficiency for the particular batch of MGC. A standard menthol aftercut solution was analyzed as a control.

Experimental menthol concentrations averaged 14% below target for the MGC solutions. The control averaged only 4% above target. The major source of error was attributed to the inability to control the resonance time of the sample in the injection port using standard packed column gas chromatographs which significantly impacted the menthol release. In addition, injection port cleanliness and injection speed also affect the efficiency of pyrolysis and hydrolysis of this compound. Based on these results, menthol released by MGC in a heated injection port can not be accurately measured using standard packed column gas chromatography.

3. Robotics

The second smoking robot was installed and is now being used routinely to generate TPM and puff count data. Installation of the third smoking cubicle robot began in October. Plans are to have this robot operational by the second week of November.

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